

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
20 January 2005 (20.01.2005)

PCT

(10) International Publication Number
WO 2005/006451 A1

(51) International Patent Classification⁷: **H01L 31/048**,
31/0216

(74) Agents: **DONLAN, Andrew, M.** et al.; Dow Corning Limited, Cardiff Road, Barry CF63 2YL (GB).

(21) International Application Number:
PCT/EP2004/007807

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(22) International Filing Date: 2 July 2004 (02.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0315846.6 7 July 2003 (07.07.2003) GB
0412516.7 4 June 2004 (04.06.2004) GB

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant (*for all designated States except US*): **DOW CORNING CORPORATION** [US/US]; Midland, MI 48611 (US).

(72) Inventors; and

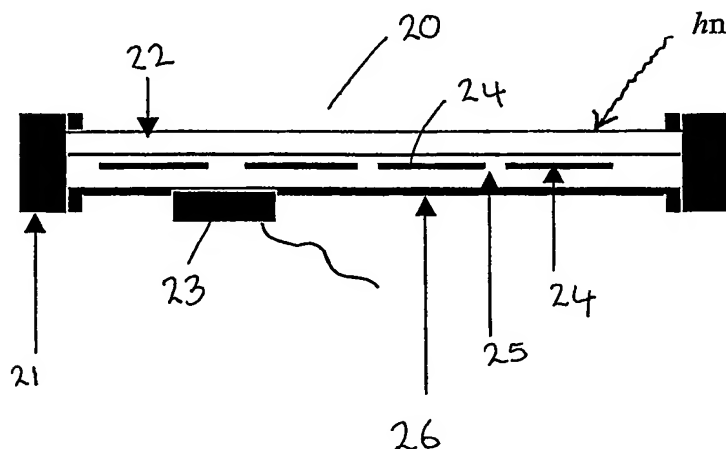
(75) Inventors/Applicants (*for US only*): **TERREAU, Christine** [BE/BE]; 9 Rue des Charbonniers, B-7973 Stamburges (BE). **HABIMANA, Jean de la Croi** [RW/BE]; 199B Chaussee D'caussinne, B-7090 Braine le Comte (BE). **JENKINS, Stephen** [US/US]; Dow Corning SA, Parc Industriel, B-7180 Seneffe (US).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **ENCAPSULATION OF SOLAR CELLS**



(57) Abstract: The present invention comprises a solar cell module and a method of encapsulating the module. The solar cell module comprises a rigid or flexible superstrate and/or substrate having one or more solar cells, and an encapsulant which is a cured liquid silicone encapsulant. The encapsulant composition preferably comprises a liquid diorganopolysiloxane having at least two Si-alkenyl groups per molecule, a silicone resin containing at least two alkenyl groups; a cross-linking agent in the form of a polyorganosiloxane having at least two silicon-bonded hydrogen atoms per molecule, in an amount such that the ratio of the number of moles of silicon-bonded hydrogen to the total number of moles of silicon-bonded alkenyl groups is from 0. 1: 1 to 5: 1; and a

hydrosilylation catalyst, preferably a platinum based catalyst.. The continuous solar cell module encapsulation process comprising the steps of uniformly applying by spraying, coating or dispensing a predetermined volume of a liquid silicone encapsulant onto a solar cell module and curing said encapsulant thermally or by infrared radiation. The preferred method of applying the liquid silicone encapsulant on to the solar cell modules is by means of a curtain coater.